



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,926	07/10/2003	Hideaki Yamasaki	010986.52578US	9914

23911 7590 06/23/2005
CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300

EXAMINER

LUND, JEFFRIE ROBERT

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,926

Applicant(s)

YAMASAKI ET AL.

Examiner

Jeffrie R. Lund

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
4a) Of the above claim(s) 25-29 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-24 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/03.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-24 in the reply filed on April 19, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 includes the limitation "an identical flow path". It is not clear if this means that the carrier gas and the inert gas are identical or if the apparatus has a single source that splits before the source and is then combined after the carrier gas is mixed with the source gas.

Claim 13 recites the limitations "said source gas" and "said carrier gas" in lines 4 and 6. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1763

5. Claims 1-5, 7, 9-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 5-259093 ('093).

'093 teaches a CVD apparatus that includes: a film forming chamber; a source gas with carrier gas 10a; an inert gas 10b; a concentration detector 7; and a gas flow controllers 1a, 1b controlling the flow rate of the gases as a result of the measurement of the concentration detector. (Abstract, figure 1) The specific gas is an intended use of the apparatus, and the apparatus as claimed can inherently supply the desired gas.

6. Claims 1-5, 9-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto, JP 6-5505.

Yamamoto teaches a CVD apparatus that includes: a film forming chamber 3; a source gas 9 with carrier gas 7; an inert gas 13; a concentration detector 12; a pressure sensor 17 and a controller 11 controlling gas flow controllers 14, which control the flow rate of the gases as a result of the measurement of the concentration detector. (Abstract, figure 1) The specific gas is an intended use of the apparatus, and the apparatus as claimed can inherently supply the desired gas.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1763

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-259093 ('093) in view of Harada et al, US Patent 6,202,653 B1.

'093 was discussed above.

'093 differs from the present invention in that '093 does not teach a bypass line or that the inert gas and carrier gas have a common source.

Harada et al teaches a coating chamber that includes a bypass line 41 and a common inert gas and carrier gas source 33. (Figure 2, 5, and 6)

The motivation for adding the bypass line of Harada et al to the apparatus of '093 is to allow the source gas to be dumped to maintain a constant flow of the source gas when the apparatus is not in use, and to enable the supply lines to be evacuated.

The motivation for having a common gas source is to simplify the gas supply system.

Art Unit: 1763

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the bypass line and common gas source of Harada et al in the apparatus of '093.

10. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto, JP 6-5505, in view of Harada et al, US Patent 6,202,653 B1.

Yamamoto was discussed above.

Yamamoto differs from the present invention in that Yamamoto does not teach a bypass line or that the inert gas and carrier gas have a common source.

Harada et al teaches a coating chamber that includes a bypass line 41 and a common inert gas and carrier gas source 33. (Figure 2, 5, and 6)

The motivation for adding the bypass line of Harada et al to the apparatus of Yamamoto is to allow the source gas to be dumped to maintain a constant flow of the source gas when the apparatus is not in use, and to enable the supply lines to be evacuated.

The motivation for having a common gas source is to simplify the gas supply system.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the bypass line and common gas source of Harada et al in the apparatus of Yamamoto.

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-259093 ('093) in view of Satake et al, JP 2001-234348.

'093 was discussed above.

Art Unit: 1763

'093 differs from the present invention in that '093 does not teach that the concentration detector is a FTIR.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of '093 is to provide a specific concentration detector as required but only generically disclosed by Satake et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of '093.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto, JP 6-5505, in view of Satake et al, JP 2001-234348.

Yamamoto was discussed above.

Yamamoto differs from the present invention in that Yamamoto does not teach that the concentration detector is a FTIR.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of Yamamoto is to provide a specific concentration detector as required but only generically disclosed by Satake et al.

Art Unit: 1763

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of Yamamoto.

13. Claim 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto, JP 6-5505, in view of Tokai et al, US Patent Application Publication 2002/0014700 A1.

Yamamoto was discussed above.

Yamamoto differs from the present invention in that Yamamoto does not teach that the controller includes a manometer (pressure sensor) and corrects the measured concentration based on the pressure.

Tokai et al teaches a coating chamber that includes a controller 38 that controls the gas sources 14 based on input from concentration detectors 36, 37 and a pressure sensor 60.

The motivation for controlling the concentration of the source gas in the apparatus of Yamamoto using signals from both the concentration detector and pressure sensor as taught by Tokai et al is to control the source flow base on there concentrations and adjusted for the pressure.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the gas sources of Yamamoto using information supplied by the concentration detector and pressure sensor as taught by Tokai et al.

Art Unit: 1763

14. Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto and Tokai et al as applied to claims 14 and 24 above, and further in view of Satake et al, JP 2001-234348.

Yamamoto and Tokai et al differ from the present invention in that they do not teach that the concentration detector is a FTIR or that the concentration detector is located upstream of where the inert gas is added.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of Yamamoto and Tokai et al is to provide a specific concentration detector as required but only generically disclosed by Satake et al.

The motivation for placing the concentration detector upstream of where the inert gas is added is to monitor the source without the inert gas. Furthermore, it has been held that the rearrangement of parts is obvious. (See In re Japikse 86 USPQ 70)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of Yamamoto and Tokai et al, and to place detector upstream of where the inert gas is added.

15. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto and Tokai et al as applied to claims 14-18, 20-22, and 24 above, and further in view of Suzuki, JP 58-67864.

Yamamoto, Tokai et al, and Satake et al differ from the present invention in that they do not teach a heated mirror located in the gas supply pipe.

FTIR detectors produce an IR beam that pass through a gas and is detected by a detector. The detector can be placed opposite the beam source so that the IR beam passes through windows on both sides of the gas pipe, or a mirror can be used to direct the IR beam to the detector.

Suzuki et al teaches heating a mirror exposed to deposition material to prevent the deposition material from depositing on the mirror. (Abstract, figure 3)

The motivation for placing a mirror in the supply pipe of Yamamoto, Tokai et al, and Satake et al is to provide an alternate and equivalent means of passing the IR beam through the gas supply pipe.

The motivation for heating a mirror exposed to coating material is to prevent deposition of material onto the mirror as taught by Suzuki et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a heated mirror in the gas supply pipe of Yamamoto, Tokai et al, and Satake et al.

Conclusion

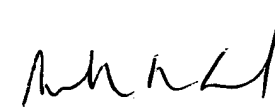
16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention.

Art Unit: 1763

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
6/20/05